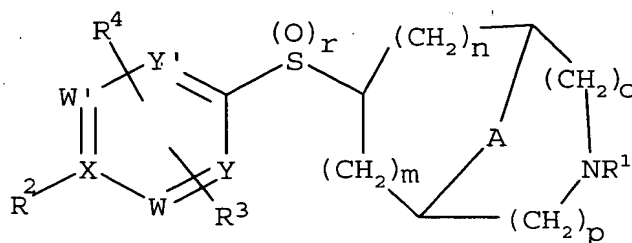


Amendments to the Claims

Claims:

1. (original) A compound represented by Formula (I) or pharmaceutically acceptable salts thereof:



(I)

wherein:

R¹ is -H,

C₁₋₁₂alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C₁₋₄alkoxy or C₁₋₄alkylthio, or aryl-C₁₋₄alkyl;

R² is -H,

-OH,

-NH₂,

-NH-Q-V-T, wherein

Q is -C(O)-, -C(O)-NH-, -C(O)O-, or -SO₂-;

V is H, aryl, aryl-C₁₋₁₂alkyl, diaryl-C₁₋₁₂alkyl,

lactonyl, or C₁₋₁₈alkyl optionally substituted with halogen, hydroxyl, C₁₋₄alkoxy, -C(O)OC₁₋₄alkyl, -OC(O)C₁₋₄alkyl, aryl-C₁₋₄alkoxy, aryloxy, or SO₂C₁₋₄alkyl; and

T is H, halogen, C₁₋₅alkyl, C₁₋₄alkoxy, nitro, aryl, aryl-C₁₋₄alkyl, or aryloxy unless V is H in which case T is absent,

aryl,

-(L)_a-Z,

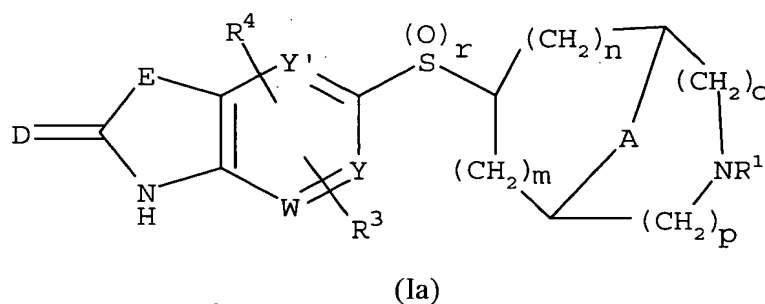
wherein

L is CH₂, CO, O, NH or N(C₁₋₄alkyl) and a is 0 or 1;

and

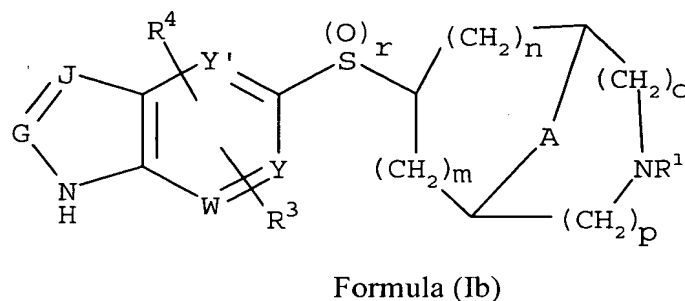
Z is C_{1-3} alkyl-F, C_{0-3} alkyl-aryl- R^6 , C_{0-3} alkyl-CO- R^6 , C_{0-3} alkyl-CO-NR 6_2 , C_{0-3} alkyl-CO $_2$ - R^6 , C_{0-3} alkyl-SO $_2$ - R^6 , C_{0-3} alkyl-SO $_2$ -NR 6_2 , C_{1-3} alkyl-OR 6 , C_{1-3} alkyl-CN or C_{1-3} alkyl-NR 6_2 , wherein each C_{0-3} alkyl or C_{1-3} alkyl portion is optionally substituted with from 1 to 6 groups selected from F and C_{1-5} alkyl,

linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ia)



wherein D is O or S; and
 E is O, S, NR 5 , C(R 5) $_2$, O-CR 5_2 , NR 5 -CR 5_2 ,
 NR 5 -CO, CR 5_2 -O, CR 5_2 -S(O) $_r$, CR 5_2 -NR 5 , CR 5_2 -
 CR 5_2 , CO-NR 5 , or CR 5 =CR 5 ; or

linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ib)



wherein G is CR 5 or N; and
 J is CR 5 or N;

unless X is N in which case R 2 is absent

R³ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁴ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁵ is each independently H or C₁₋₄alkyl;

R⁶ is each independently H, C₁₋₆alkyl, aryl or arylC₁₋₄alkyl, each of which (except H) may be optionally substituted with from 1 to 3 fluorine atoms;

X is C or N;

W is C or N;

W' is C or N;

Y is C or N;

Y' is C or N;

provided that there are no more than two N atoms in the aryl ring;

A is optionally a double bond, (CH₂)_q or (CH₂)O(CH₂);

m, n, o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

provided that

2. (original) A compound as claimed in Claim 1

wherein:

R² is -H,

-NH₂,

-NH-Q-V-T as defined in claim 1,

aryl,

-(L)_a-Z as defined in claim 1,

linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ia) as defined in claim 1, or

linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ib) as defined in claim 1;

unless X is N in which case R² is absent.

3. (original) A compound as claimed in Claim 1 or Claim 2

wherein:

R² is -NH-Q-V-T as defined in claim 1,
aryl,
-(L)_a-Z as defined in claim 1,
linked back to the aromatic ring so as to form a fused bicyclic compound
represented by Formula (Ia) as defined in claim 1, or
linked back to the aromatic ring so as to form a fused bicyclic compound
represented by Formula (Ib) as defined in claim 1;

unless X is N in which case R² is absent.

4. (currently amended) A compound as claimed in [[any one of]] Claim[[s 1 to]] 3

wherein:

R² is -NH-Q-V-T wherein Q is -C(O)-NH-, or -C(O)O-;
V is as defined in claim 1; and
T is as defined in claim 1;
aryl,
-(L)_a-Z as defined in claim 1,
linked back to the aromatic ring so as to form a fused bicyclic compound
represented by Formula (Ia) as defined in claim 1, or
linked back to the aromatic ring so as to form a fused bicyclic compound
represented by Formula (Ib) as defined in claim 1;

unless X is N in which case R² is absent.

5. (original) A compound as claimed in Claim 1

wherein:

R¹ is -H,
C₁₋₁₂alkyl optionally substituted with 1, 2 or 3 groups independently selected
from halogen, hydroxyl, thiol, C₁₋₄alkoxy or C₁₋₄alkylthio, or
aryl-C₁₋₄alkyl;

R² is -H,

-OH,

-NH₂,

-NH-Q-V-T, wherein

Q is -C(O)-, -C(O)-NH-, -C(O)O-, or -SO₂-;

V is aryl, aryl-C₁₋₁₂alkyl, diaryl-C₁₋₁₂alkyl, lactonyl, or C₁₋₁₈alkyl optionally substituted with halogen, hydroxyl, C₁₋₄alkoxy, -C(O)OC₁₋₄alkyl, -OC(O)C₁₋₄alkyl, aryl-C₁₋₄alkoxy, aryloxy, or SO₂C₁₋₄alkyl; and

T is H, halogen, aryl, aryl-C₁₋₄alkyl, or aryloxy,

unless X is N in which case R² is absent

R³ is H, halogen, C₁₋₄alkyl, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH,

R⁴ is H, halogen, C₁₋₄alkyl, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH,

X is C or N,

W is C or N, provided that both X and Y are not N,

W' is C

Y is C or N

Y' is C

A is optionally a double bond, (CH₂)_q or (CH₂)O(CH₂),

m, n, o and p are independently 0, 1, 2 or 3

q is optionally 1, 2 or 3

r is 0.

6. (original) A compound as claimed in claim 5 wherein R¹ is H, C₁₋₆alkyl optionally substituted with 1 or 2 hydroxyl groups, or aryl-C₁₋₄alkyl.

7. (original) A compound as claimed in claim 6 wherein R¹ is benzyl, p-methoxybenzyl, furanylmethyl, imidazolymethyl, pyridinylmethyl, thienylmethyl, pyridylmethyl, N-hydroxypyridylmethyl or thiazolylmethyl.

8. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is H, R^3 is carbonamido ($-\text{CONH}_2$) or $\text{C}_{1-4}\text{alkyl}-\text{OH}$, and R^4 is H, $\text{C}_{1-4}\text{alkyl}$, CF_3 , halogen or cyano.
9. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is OH, and R^3 and R^4 each independently represent H, $\text{C}_{1-4}\text{alkyl}$, CF_3 , cyano or halogen.
10. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-\text{NH}-\text{Q}-\text{V}-\text{T}$; T is H and R^3 and R^4 each independently represent H, methyl, CF_3 , chloro- or cyano-.
11. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-\text{NH}-\text{SO}_2-\text{V}-\text{T}$; V is aryl, $-\text{C}_{1-12}\text{alkyl}$ or aryl- $\text{C}_{1-12}\text{alkyl}$; R_3 is H, methyl, CF_3 , Cl or cyano and R^4 is H.
12. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-\text{NH}-\text{SO}_2-\text{V}-\text{T}$, V is selected from $\text{C}_{1-12}\text{alkyl}$, phenyl, naphthyl, thienyl, oxazolyl, isoxazolyl, or phenyl($\text{CH}=\text{CH}$)-, optionally substituted with 1, 2, 3 or 4 substituents selected from:
- NO_2 ;
 - halogen;
 - CF_3 ;
 - $\text{C}_{1-12}\text{alkoxy}$;
 - $\text{C}_{1-12}\text{alkylthio}$;
 - $\text{C}_{1-12}\text{alkyl}$;
 - $\text{C}_{1-4}\text{alkylsulfonyl}$;
 - CN;
 - OCF_3 ;
 - $\text{C}(\text{O})\text{OC}_{1-4}\text{alkyl}$;
 - OCH_2CF_3 ;
 - $\text{NHC}(\text{O})\text{C}_{1-4}\text{alkyl}$.

13. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-SO_2-V-T$, T is selected from H; or diazole, oxazole, isoxazole, phenyl or phenoxy, optionally substituted with 1, 2, 3 or 4 substituents selected from

- NO₂;
- halogen;
- CF₃;
- C₁₋₁₂alkoxy;
- C₁₋₁₂alkylthio;
- C₁₋₁₂alkyl;
- C₁₋₄alkylsulfonyl;
- CN;
- OCF₃;
- C(O)OC₁₋₄alkyl;
- OCH₂CF₃;
- NHC(O)C₁₋₄alkyl.

14. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-SO_2-V-T$, V is selected from 3-chloro-4-methylphenyl, 3-chlorophenyl, 3-methoxyphenyl, 4-bromophenyl, 4-methoxyphenyl, 4-methylphenyl, naphthyl, 2,4,6-trimethylphenyl, phenyl(CH=CH)-, 4-chlorophenyl, 2-chlorophenyl, 2,5-dichlorophenyl, 2,5,6-trimethyl-4-methoxyphenyl, 4-methoxyphenyl, 2,3,4-trifluorophenyl, 3-cyanophenyl, 2-methoxycarbonylthien-3-yl or 4-pentylphenyl and T is H.

15. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-SO_2-V-T$, T is 2-chloro-5-nitrophenoxy and V is phenyl.

16. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-C(O)-V-T$ wherein V is selected from aryl; aryl-C₁₋₁₂alkyl; diaryl-C₁₋₁₂alkyl; lactonyl; or C₁₋₁₈alkyl optionally substituted with halogen, hydroxyl, C₁₋₄alkoxy, C(O)OC₁₋₄alkyl, OC(O)C₁₋₄alkyl, aryl-C₁₋₄alkoxy or aryloxy.

17. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-C(O)-V-T$, and V is selected from C_{1-12} alkyl, phenyl, phenyl- C_{1-12} alkyl, diphenylmethyl, naphthyl, furanyl, thienyl, diazolyl, pyridinyl, thiazolyl, benzothienyl, fluorenyl, oxazolyl or isoxazolyl, optionally substituted with 1, 2, 3 or 4 substituents independently selected from

- NO₂;
- halogen;
- CF₃;
- C_{1-12} alkoxy;
- C_{1-12} alkylthio;
- C_{1-12} alkyl;
- C_{1-4} alkylsulfonyl;
- CN;
- OCF₃;
- C(O)O- C_{1-4} alkyl;
- OCH₂CF₃.

18. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-C(O)-V-T$, T is selected from H; halogen; or diazole, oxazole, isoxazole, phenyl, phenoxy or benzodioxanyl optionally substituted with 1, 2, 3 or 4 substituents selected from

- NO₂;
- halogen;
- CF₃;
- C_{1-12} alkylthio;
- C_{1-12} alkoxy;
- C_{1-12} alkyl;
- C_{1-4} alkylsulfonyl;
- CN;
- OCF₃;
- C(O)O- C_{1-4} alkyl.

19. (currently amended) A compound as claimed in [[any one of]] Claim[[s 5 to]] 7 wherein R^2 is of formula $-NH-C(O)NH-V-T$ wherein V is selected from C_{1-18} alkyl optionally

substituted with halogen, hydroxyl, C₁₋₄alkoxy, C(O)OC₁₋₄alkyl, OC(O)C₁₋₄alkyl, aryl-C₁₋₄alkoxy or aryloxy; aryl; or aryl-C₁₋₁₂alkyl.

20. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R² is of formula -NH-C(O)NH-V-T, V is selected from phenyl, phenyl-C₁₋₁₂alkyl or naphthyl optionally substituted with 1, 2, 3 or 4 substituents selected from

- NO₂;
- halogen;
- CF₃;
- C₁₋₁₂alkylthio;
- C₁₋₁₂alkoxy;
- C₁₋₁₂alkyl;
- C₁₋₄alkylsulfonyl;
- CN;
- OCF₃;
- C(O)O-C₁₋₄alkyl.

21. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R² is of formula -NH-C(O)O-V-T, wherein V is selected from C₁₋₁₈alkyl optionally substituted with halogen, hydroxyl, C₁₋₄alkoxy, C(O)OC₁₋₄alkyl, OC(O)C₁₋₄alkyl, aryl-C₁₋₄alkoxy or aryloxy; aryl; or aryl-C₁₋₁₂alkyl.

22. (currently amended) A compound as claimed in [[any one of]] claim[[s 5 to]] 7 wherein R² is of formula -NH-C(O)O-V-T, preferably V is selected from phenyl or phenyl-C₁₋₁₂alkyl optionally substituted with 1, 2, 3 or 4 substituents selected from

- NO₂;
- halogen;
- CF₃;
- C₁₋₁₂alkylthio;
- C₁₋₁₂alkoxy;
- C₁₋₁₂alkyl;
- C₁₋₄alkylsulfonyl;
- CN;
- OCF₃;

-C(O)O-C₁₋₄alkyl; or

-OCH₂CF₃.

23. (original) A compound as claimed in claim 1 wherein R² is of formula -NH-C(O)-V-T wherein V is H, C₁₋₆alkyl, C₃₋₆cycloalkyl, aryl or aryl-C₁₋₁₂alkyl; and T is H, halogen, C₁₋₅alkyl, C₁₋₄alkoxy, nitro, aryl, aryl-C₁₋₄alkyl, or aryloxy unless V is H in which case T is absent.

24. (original) A compound as claimed in claim 23 wherein V is H, C₁₋₆alkyl or C₃₋₆cycloalkyl; and T is H unless V is H in which case T is absent.

25. (original) A compound as claimed in claim 23 wherein V is aryl or aryl-C₁₋₁₂alkyl; and T is H, halogen, C₁₋₅alkyl, C₁₋₄alkoxy, nitro, aryl, aryl-C₁₋₄alkyl, or aryloxy.

26. (original) A compound as claimed in claim 25 wherein V is phenyl, pyridyl, thienyl, thiazolyl, thiadiazolyl, or phenyl-C₁₋₆alkyl; and T is H, halogen, C₁₋₅alkyl, C₁₋₄alkoxy, nitro, aryl, aryl-C₁₋₄alkyl, or aryloxy.

27. (original) A compound as claimed in claim 1 wherein

R¹ is -H,

C₁₋₁₂alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C₁₋₄alkoxy or C₁₋₄alkylthio, or aryl-C₁₋₄alkyl;

R² is -NH₂, or

-NH-Q-V-T, wherein

Q is -C(O)-, -C(O)-NH-, -C(O)O-, or -SO₂-;

V is H, aryl, aryl-C₁₋₁₂alkyl, diaryl-C₁₋₁₂alkyl, lactonyl, or C₁₋₁₈alkyl optionally substituted with halogen, hydroxyl, C₁₋₄alkoxy, -C(O)OC₁₋₄alkyl, -OC(O)C₁₋₄alkyl, aryl-C₁₋₄alkoxy, aryloxy, or SO₂C₁₋₄alkyl; and

T is H, halogen, aryl, aryl-C₁₋₄alkyl, or aryloxy
unless V is H in which case T is absent,

R³ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms,
cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃-
10cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -
SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁴ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms,
cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃-
10cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -
SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

X is C;

W is C or N;

W' is C or N;

Y is C or N;

Y' is C or N;

provided that there are not more than two N atoms in the aryl ring and provided that at
least one of W, W', Y or Y' is N;

A is optionally a CH=CH double bond, (CH₂)_q or (CH₂)O(CH₂);

m,n,o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

28. (original) A compound as claimed in claim 27

wherein

W is C;

W' is C;

Y' is C; and

Y is N.

29. (original) A compound as claimed in claim 27

wherein

W is N;

W' is C;

Y' is C; and

Y is C.

30. (currently amended) A compound as claimed in [[any one of]] claim[[s 27 to]] 29 wherein

R^2 is $-NH_2$.

31. (currently amended) A compound as claimed in [[any one of]] claim[[s 27 to]] 29 wherein

R^2 is $-NH-Q-V-T$, wherein Q is $-C(O)-$, $-C(O)-NH-$, $-C(O)O-$, or $-SO_2-$; V is H, aryl, aryl- C_{1-12} alkyl, diaryl- C_{1-12} alkyl, lactonyl, or C_{1-18} alkyl optionally substituted with halogen, hydroxyl, C_{1-4} alkoxy, $-C(O)OC_{1-4}$ alkyl, $-OC(O)C_{1-4}$ alkyl, aryl- C_{1-4} alkoxy, aryloxy, or SO_2C_{1-4} alkyl; and T is H, halogen, aryl, aryl- C_{1-4} alkyl, or aryloxy unless V is H in which case T is absent.

32. (original) A compound as claimed in claim 31 wherein

Q is $-SO_2-$ or $-CO-$.

33. (original) A compound as claimed in claim 1 wherein

R^1 is $-H$,
 C_{1-12} alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C_{1-4} alkoxy or C_{1-4} alkylthio, or aryl- C_{1-4} alkyl;
 R^2 is aryl,
 R^3 is H, halogen, C_{1-4} alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF_3 , OC_{1-4} alkyl, aryloxy, aryl- C_{1-4} alkyl, aryl- C_{1-4} alkoxy, C_3 , 10 cycloalkoxy, carboxy, carbonamido, $-CO-NH-C_{1-4}$ alkyl, aryl, hydroxy, $-SO_2NH_2$, $-SO_2NHC_{1-4}$ alkyl, or $-C_{1-4}$ alkyl-OH,

R⁴ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

X is C,

W is C or N;

W' is C or N;

Y is C or N;

Y' is C or N;

provided that there are no more than two N atoms in the aryl ring;

A is optionally a CH=CH double bond, (CH₂)_q or (CH₂)O(CH₂);

m,n,o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

34. (original) A compound as claimed in claim 33 wherein R² is a C₃ to C₁₂ aromatic or heteroaromatic group optionally substituted with one or more substituents selected from C₁₋₁₂alkyl, C₁₋₁₂alkoxy, thio, C₁₋₁₂alkylthio, carboxy, carboxy(C₁₋₆alkyl), formyl, C₁₋₆alkylcarbonyl, C₁₋₆alkylsulfonyl, C₁₋₆alkylcarbonylalkoxy, nitro, trihalomethyl, trihaloalkoxy, trihalomethoxy, trihalomethyl(C₁₋₆alkyl), hydroxy, hydroxy(C₁₋₆alkyl), (C₁₋₆alkoxy)carbonyl, amino, C₁₋₆alkylamino, di(C₁₋₆alkyl)amino, aminocarboxy, C₁₋₆alkylaminocarboxy, di(C₁₋₆alkyl)aminocarboxy, aminocarboxy(C₁₋₆alkyl), C₁₋₆alkylaminocarboxy(C₁₋₆alkyl), di(C₁₋₆alkyl)aminocarboxy(C₁₋₆alkyl), C₁₋₆alkylcarbonylamino, C₁₋₆alkylcarbonyl(C₁₋₆alkyl)amino, halo, C₁₋₆alkylhalo, sulphamoyl, tetrazolyl and cyano.

35. (original) A compound as claimed in claim 33 wherein R² is phenyl, naphthyl, fluorenyl, thienyl, furanyl, pyrrolyl, imidazolyl, pyrazolyl, thiazolyl, isothiazolyl, oxazolyl, isoxazolyl, oxadiazolyl, thiadiazolyl, diazolyl, triazolyl, tetrazolyl, benzothiazolyl, benzimidazolyl, pyrrolinyl, imidazolinyl, pyranyl, pyronyl, pyridyl, pyrazinyl, pyridazinyl, thianaphthyl, benzofuranyl, isobenzofuranyl, benzothienyl, isobenzothienyl, indolyl, oxyindolyl, isoindolyl, indazolyl, indolinyl, 7-azaindolyl, azabenzimidazolyl, carbazolyl benzopyranyl, coumarinyl, isocoumarinyl, quinolinyl, isoquinolinyl, quinazolinyl, benzoxazinyl, quinoxalinyl, chromenyl, chromanyl, isochromanyl, phthalazinyl, benzodioxolyl, benzodioxanyl, cinnolinyl

or carbolinyl optionally substituted with one or more substituents selected from C₁₋₁₂alkyl, C₁₋₁₂alkoxy, thio, C₁₋₁₂alkylthio, carboxy, carboxy(C₁₋₆alkyl), formyl, C₁₋₆alkylcarbonyl, C₁₋₆alkylsulfonyl, C₁₋₆alkylcarbonylalkoxy, nitro, trihalomethyl, trihaloalkoxy, trihalomethoxy, trihalomethyl(C₁₋₆alkyl), hydroxy, hydroxy(C₁₋₆alkyl), (C₁₋₆alkoxy)carbonyl, amino, C₁₋₆alkylamino, di(C₁₋₆alkyl)amino, aminocarboxy, C₁₋₆alkylaminocarboxy, di(C₁₋₆alkyl)aminocarboxy, aminocarboxy(C₁₋₆alkyl), C₁₋₆alkylaminocarboxy(C₁₋₆alkyl), di(C₁₋₆alkyl)aminocarboxy(C₁₋₆alkyl), C₁₋₆alkylcarbonylamino, C₁₋₆alkylcarbonyl(C₁₋₆alkyl)amino, halo, C₁₋₆alkylhalo, sulphamoyl, tetrazolyl and cyano.

36. (original) A compound as claimed in claim 33 wherein R² is phenyl, thienyl, imidazolyl, oxazolyl, isoxazolyl, oxadiazolyl, thiadiazolyl, diazolyl, triazolyl, tetrazolyl, benzothiazolyl, benzimidazolyl, pyridyl, pyrazinyl, pyridazinyl, benzofuranyl, benzothienyl, or quinolinyl, optionally substituted with one or more substituents selected from C₁₋₁₂alkyl, C₁₋₁₂alkoxy, thio, C₁₋₁₂alkylthio, carboxy, carboxy(C₁₋₆alkyl), formyl, C₁₋₆alkylcarbonyl, C₁₋₆alkylsulfonyl, C₁₋₆alkylcarbonylalkoxy, nitro, trihalomethyl, trihaloalkoxy, trihalomethoxy, trihalomethyl(C₁₋₆alkyl), hydroxy, hydroxy(C₁₋₆alkyl), (C₁₋₆alkoxy)carbonyl, amino, C₁₋₆alkylamino, di(C₁₋₆alkyl)amino, aminocarboxy, C₁₋₆alkylaminocarboxy, di(C₁₋₆alkyl)aminocarboxy, aminocarboxy(C₁₋₆alkyl), C₁₋₆alkylaminocarboxy(C₁₋₆alkyl), di(C₁₋₆alkyl)aminocarboxy(C₁₋₆alkyl), C₁₋₆alkylcarbonylamino, C₁₋₆alkylcarbonyl(C₁₋₆alkyl)amino, halo, C₁₋₆alkylhalo, sulphamoyl, tetrazolyl and cyano.

37. (original) A compound as claimed in claim 1 wherein:

R¹ is -H,

C₁₋₁₂alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C₁₋₄alkoxy or C₁₋₄alkylthio, or aryl-C₁₋₄alkyl;

R² is (L)_a-Z, wherein

L is O, CO, CH₂, NH or N(C₁₋₄alkyl) and a is 0 or 1; and

Z is C₁₋₃alkyl-F, C₀₋₃alkyl-aryl-R⁶, C₀₋₃alkyl-CO-R⁶, C₀₋₃alkyl-CO-NR⁶₂, C₀₋₃alkyl-CO₂-R⁶, C₀₋₃alkyl-SO₂-R⁶, C₀₋₃alkyl-SO₂-NR⁶₂, C₁₋₃alkyl-OR⁶, C₁₋₃alkyl-CN or C₁₋₃alkyl-NR⁶₂ wherein each C₀₋₃alkyl or C₁₋₃alkyl portion

is optionally substituted with from 1 to 6 groups
selected from F and C₁₋₅alkyl,

R³ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁴ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁶ is each independently H, C₁₋₆alkyl, aryl, or arylC₁₋₄alkyl, each of which (except H) may be optionally substituted with from 1 to 3 fluorine atoms;

X is C;

W is C or N,

Y is C or N,

W' is C or N,

Y' is C or N,

provided that there are no more than two N atoms in the aryl ring,

A is optionally a double bond, (CH₂)_q or (CH₂)O(CH₂);

m,n,o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

38. (original) A compound as claimed in claim 37 wherein L is O, CO or CH₂.

39. (original) A compound as claimed in claim 37 wherein L is NH or N(C₁₋₄alkyl).

40. (currently amended) A compound as claimed in [[any one of]] claim[[s 37 to]] 39 wherein Z is C₀₋₃alkyl-aryl-R⁶, C₀₋₃alkyl-CO-NR⁶₂, C₀₋₃alkyl-CO₂-R⁶, C₁₋₃alkyl-OR⁶ or C₁₋₃alkyl-NR⁶₂ wherein each C₀₋₃alkyl or C₁₋₃alkyl portion is optionally substituted with from 1 to 6 groups selected from F and C₁₋₅alkyl.

41. (currently amended) A compound as claimed in [[any one of]] claims [[37 to 40]] 38 or 39 wherein Z is C₀₋₃alkyl-aryl-R⁶ wherein aryl is selected from phenyl, naphthyl, fluorenyl,

thienyl, furanyl, pyrrolyl, imidazolyl, pyrazolyl, thiazolyl, isothiazolyl, oxazolyl, isoxazolyl, oxadiazolyl, thiadiazolyl, diazolyl, triazolyl, tetrazolyl, benzothiazolyl, benzimidazolyl, pyrrolinyl, imidazolinyl, pyranyl, pyronyl, pyridyl, pyrazinyl, pyridazinyl, thianaphthyl, benzofuranyl, isobenzofuranyl, benzothienyl, isobenzothienyl, indolyl, oxyindolyl, isoindolyl, indazolyl, indolinyl, 7-azaindolyl, azabenzimidazolyl, carbazolyl benzopyranyl, coumarinyl, isocoumarinyl, quinolinyl, isoquinolinyl, quinazolinyl, benzoxazinyl, quinoxalinyl, chromenyl, chromanyl, isochromanyl, phthalazinyl, benzodioxolyl, benzodioxanyl, cinnolinyl or carbolinyl optionally, be substituted with one or more substituents selected from C₁ to C₁₂ alkyl (preferably C₁ to C₆ alkyl), C₁ to C₁₂ alkoxy (preferably C₁ to C₆ alkoxy), thio, C₁ to C₁₂ alkylthio (preferably C₁ to C₆ alkylthio), carboxy, carboxy(C₁ to C₆)alkyl, formyl, C₁ to C₆ alkylcarbonyl, C₁ to C₆ alkylsulfonyl, C₁ to C₆ alkylcarbonylalkoxy, nitro, trihalomethyl, trihalo(C₁ to C₆ alkoxy), trihalomethoxy, trihalomethyl(C₁ to C₆ alkyl), hydroxy, hydroxy(C₁ to C₆)alkyl, (C₁ to C₆ alkoxy)carbonyl, amino, C₁ to C₆ alkylamino, di(C₁ to C₆ alkyl)amino, aminocarboxy, C₁ to C₆ alkylaminocarboxy, di(C₁ to C₆ alkyl)aminocarboxy, aminocarboxy(C₁ to C₆)alkyl, C₁ to C₆ alkylaminocarboxy(C₁ to C₆)alkyl, di(C₁ to C₆ alkyl)aminocarboxy(C₁ to C₆)alkyl, C₁ to C₆ alkylcarbonylamino, C₁ to C₆ alkylcarbonyl(C₁ to C₆ alkyl)amino, halo, C₁ to C₆ alkylhalo, sulphamoyl, tetrazolyl and cyano and wherein each C₀₋₃alkyl portion is optionally substituted with from 1 to 3 groups selected from F and C₁₋₃alkyl.

42. (currently amended) A compound as claimed in [[any one of]] claims [[37 to 40]] 38 or 39 wherein Z is C₁₋₃alkyl-CO-NR⁶₂, wherein each C₁₋₃alkyl portion is optionally substituted with from 1 to 3 groups selected from F and C₁₋₃alkyl.

43. (currently amended) A compound as claimed in [[any one of]] claims [[37 to 40]] 38 or 39 wherein Z is C₁₋₃alkyl-CO₂-R⁶, wherein each C₁₋₃alkyl portion is optionally substituted with from 1 to 3 groups selected from F and C₁₋₃alkyl.

44. (currently amended) A compound as claimed in [[any one of]] claims [[37 to 40]] 38 or 39 wherein Z is C₁₋₃alkyl-OR⁶ wherein each C₁₋₃alkyl portion is optionally substituted with from 1 to 3 groups selected from F and C₁₋₃alkyl.

45. (currently amended) A compound as claimed in [[any one of]] claims [[37 to 40]] 38 or 39 wherein Z is C₁₋₃alkyl-NR⁶₂ wherein each C₁₋₃alkyl portion is optionally substituted with from 1 to 3 groups selected from F and C₁₋₃alkyl.

46. (currently amended) A compound as claimed in any one of claims 37 to [[45]] 39 wherein R⁶ is/are each independently H, C₁₋₆alkyl, phenyl, or phenylC₁₋₄alkyl, each of which (except H) may be optionally substituted with from 1 to 3 fluorine atoms.

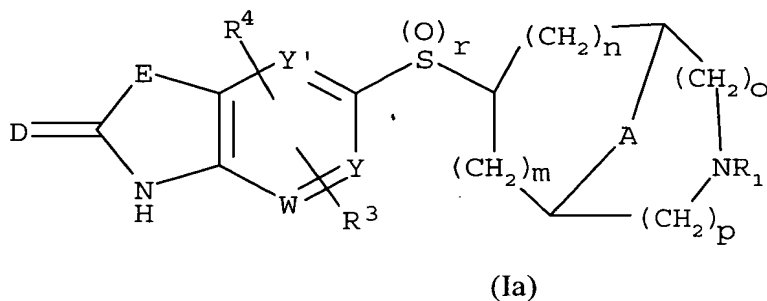
47. (currently amended) A compound as claimed in any one of claims 37 to [[46]] 39 wherein R⁶ is/are each independently H, methyl, ethyl, propyl, cyclohexyl, or benzyl, each of which (except H) may be optionally substituted with 1, 2 or 3 fluorine atoms.

48. (original) A compound as claimed in Claim 1 wherein:

R¹ is -H,

C₁₋₁₂alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C₁₋₄alkoxy or C₁₋₄alkylthio, or aryl-C₁₋₄alkyl;

R² is linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ia)



wherein D is O or S; and

E is O, S, NR⁵, or C(R⁵)₂,

R³ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁴ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy, carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁵ is each independently H or C₁₋₄alkyl;

X is C;

W is C or N;

Y is C or N;

Y' is C or N;

provided that there are no more than two N atoms in the aryl ring,

A is optionally a double bond, (CH₂)_q or (CH₂)O(CH₂);

m,n,o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

49. (original) A compound as claimed in Claim 48 wherein E is O or NR⁵.

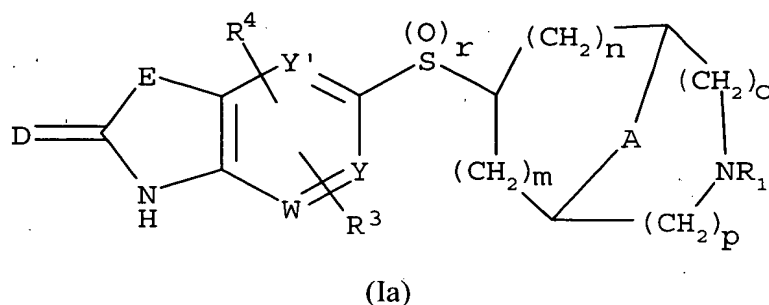
50. (original) A compound as claimed in Claim 48 or 49 wherein R⁵ is/are each independently H or C₁₋₄alkyl.

51. (original) A compound as claimed in Claim 1
wherein:

R¹ is -H,

C₁₋₁₂alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C₁₋₄alkoxy or C₁₋₄alkylthio, or aryl-C₁₋₄alkyl;

R² is linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ia)



wherein D is O or S; and
 E is O-CR⁵₂, NR⁵-CR⁵₂, NR⁵-CO, CR⁵₂-O,
 CR⁵₂-S(O)_r, CR⁵₂-NR⁵, CR⁵₂-CR⁵₂, CO-NR⁵, or
 CR⁵=CR⁵;

R³ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms,
 cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy,
 carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -
 SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁴ is H, halogen, C₁₋₄alkyl optionally substituted with from 1 to 3 fluorine atoms,
 cyano, CF₃, OC₁₋₄alkyl, aryloxy, arylC₁₋₄alkyl, arylC₁₋₄alkoxy, C₃₋₁₀cycloalkoxy,
 carboxy, carbonamido, -CO-NH-C₁₋₄alkyl, aryl, hydroxy, -
 SO₂NH₂, -SO₂NHC₁₋₄alkyl, or -C₁₋₄alkyl-OH;

R⁵ is each independently H, C₁₋₄alkyl;

X is C;

W is C or N;

Y is C or N;

Y' is C or N;

provided that there are no more than two N atoms in the aryl ring;

A is optionally a double bond or (CH₂)_q or (CH₂)O(CH₂);

m, n, o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

52. (original) A compound as claimed in Claim 51 wherein E is O-CR⁵₂, NR⁵-CR⁵₂, NR⁵-CO, CR⁵₂-CR⁵₂, or CR⁵=CR⁵.

53. (original) A compound as claimed in Claim 51 or 52 wherein E is $O-CR^5$, NR^5-CO , or $CR^5=CR^5$.

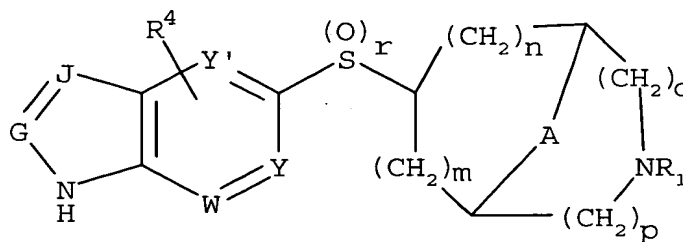
54. (currently amended) A compound as claimed in [[any one of]] Claim[[s 51 to]] 53 wherein R^5 is/are each independently H or C_{1-4} alkyl.

55. (original) A compound as claimed in Claim 1 wherein:

R^1 is -H,

C_{1-12} alkyl optionally substituted with 1, 2 or 3 groups independently selected from halogen, hydroxyl, thiol, C_{1-4} alkoxy or C_{1-4} alkylthio, or aryl- C_{1-4} alkyl;

R^2 is linked back to the aromatic ring so as to form a fused bicyclic compound represented by Formula (Ib)



Formula (Ib)

wherein G is CR^5 or N; and

J is CR^5 or N;

R^3 is H, halogen, C_{1-4} alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF_3 , OC_{1-4} alkyl, aryloxy, aryl C_{1-4} alkyl, aryl C_{1-4} alkoxy, C_{3-10} cycloalkoxy, carboxy, carbonamido, $-CO-NH-C_{1-4}$ alkyl, aryl, hydroxy, $-SO_2NH_2$, $-SO_2NHC_{1-4}$ alkyl, or $-C_{1-4}$ alkyl-OH;

R^4 is H, halogen, C_{1-4} alkyl optionally substituted with from 1 to 3 fluorine atoms, cyano, CF_3 , OC_{1-4} alkyl, aryloxy, aryl C_{1-4} alkyl, aryl C_{1-4} alkoxy, C_{3-10} cycloalkoxy, carboxy, carbonamido, $-CO-NH-C_{1-4}$ alkyl, aryl, hydroxy, $-SO_2NH_2$, $-SO_2NHC_{1-4}$ alkyl, or $-C_{1-4}$ alkyl-OH;

R^5 is each independently H or C_{1-4} alkyl;

X is C;

W is C or N;

Y is C or N;

Y' is C or N

provided that there are no more than two N atoms in the aryl ring;

A is optionally a double bond or $(\text{CH}_2)_q$ or $(\text{CH}_2)\text{O}(\text{CH}_2)$;

m,n,o and p are independently 0, 1, 2 or 3;

q is optionally 1, 2 or 3;

r is 0, 1 or 2.

56. (original) A compound as claimed in Claim 5 wherein each R^5 is H.

57. (currently amended) A compound as claimed in Claims 1 ~~or any one of claims 23 to 56~~, 48, 51 or 55 wherein r is 0.

58. (currently amended) A compound as claimed in Claims 1 ~~or any one of claims 23 to 56~~, 48, 51 or 55 wherein r is 2.

59. (currently amended) A compound as claimed in any one of Claims 1, ~~[[to 6 or 8 to 58]]~~ 48, 51 or 55 wherein R^1 is H or C_{1-3} alkyl, preferably methyl.

60. (currently amended) A compound as claimed in any ~~[[preceding]]~~ one of claims 1, 48, 51 or 55 wherein A is CH_2 , CH_2CH_2 or $\text{CH}=\text{CH}$.

61. (currently amended) A compound as claimed in any ~~[[preceding]]~~ one of claims 1, 48, 51 or 55 wherein m and n are 1 or 2 and o and p are 0 or 1.

62. (currently amended) A compound as claimed in any ~~[[preceding]]~~ one of claims 1, 48, 51 or 55 wherein m and n are 1 and o and p are 0.

63. (currently amended) A compound as claimed in any ~~[[preceding]]~~ one of claims 1, 48, 51 or 55 wherein m and n are 1, o and p are 0 and A is CH_2CH_2 or $\text{CH}=\text{CH}$.

64. (currently amended) A compound as claimed in any ~~[[preceding]]~~ one of claims 1, 48, 51 or 55 wherein

R³ is H, halogen, C₁₋₄alkyl, CF₃, or OC₁₋₄alkyl, and

R⁴ is H, halogen, C₁₋₄alkyl, CF₃, or OC₁₋₄alkyl.

65. (currently amended) A compound as claimed in any [[preceding]] one of claims 1, 48, 51 or 55 wherein one or both of R³ and R⁴ are positioned ortho to the S(O)_r moiety.

66. (currently amended) A pharmaceutical composition comprising a compound as claimed in any one of [[preceding]] claims 1, 48, 51 or 55 with a pharmaceutically acceptable diluent or carrier.

Claims 67 – 68 (canceled)

69. (currently amended) A method of treatment of a condition indicating treatment with a beta 4 subtype selective nicotinic acetylcholine receptor modulator comprising administering an effective amount of a compound as claimed in any one of claims 1 [[to 65]], 48, 51 or 55 [[or a composition as claimed in claim 66 to a patient in need thereof]].

70. (canceled)

71. (currently amended) A method of treatment of dysfunctions of the central and autonomic nervous systems comprising administering an effective amount of a compound as claimed in any one of claims 1 [[to 65]], 48, 51 or 55 [[or a composition as claimed in claim 63 to a patient in need thereof]].